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FAIRFIELD, CT 06824

EXAMINER

LEE, Y YOUNG

ART UNIT	PAPER NUMBER
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2613

DATE MAILED: 09/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/935,119

Applicant(s)

CAGLAR ET AL.

Examiner

Y. Lee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

### A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 August 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>3 and 5</u> . | 6) <input type="checkbox"/> Other: ____.  |

## **DETAILED ACTION**

### ***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Drawings***

2. Figures 1-17 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.121(d)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.
3. The drawings are objected to because all diagrammatic blocks and features in Figure 23 are required to be distinctly labeled to indicate contents or function with legends (37 C.F.R. 1.83(a), 1.84(o)) since they are necessary for understanding of the drawing. Correction is required.

### ***Specification***

4. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The

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abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

5. The abstract of the disclosure is objected to because of the inclusion of legal phraseology and implied wordings such as "comprises" in line 1 and "described" in line 13. Correction is required. See MPEP § 608.01(b).

6. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: "Video Coding on the Basis of Virtual Frame Rather Than a Complete Frame".

### ***Claim Objections***

7. Claims 1, 10, 13, 17, and 20-27 are objected to because of the following informalities:

(a) claims 1, 10, 13, 17, 20-24, and 26, after "the first complete frame" (first occurrence), --,-- should be inserted;

(b) claim 22, line 13, "the second complete frame" should be deleted;

(c) claim 24, line 10, after "frame", --,-- should be inserted;

(d) claim 24, line 11, after "information" (second occurrence), --,-- should be inserted; and

(e) claims 25 and 27, line 6, "of the" should be deleted.

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 25 and 27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

10. Claims 25 and 27 recite the limitation "the second frame" in line 1. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 102***

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

12. Claims 1-15, 17, and 19-27 are rejected under 35 U.S.C. 102(a) as being anticipated by Applicant's admitted prior art.

Applicant's admitted prior art, in Figures 1-17, discloses the same decoder and encoder for decoding and encoding a video signal to produce a bit-stream as specified in claims 1-15, 17, and 19-27 of the present invention, comprising the steps of decoding and encoding a first complete frame (e.g. Frame 1 of Fig. 8) by forming a first portion of the bit-stream comprising information for reconstruction of the first complete frame, the information being prioritized into high (e.g. Enhancement Layers) and low (e.g. Base Layer) priority information; defining a first virtual frame (e.g. Frame 2 of 3<sup>rd</sup> Layer in Fig.

8) on the basis of a version of the first complete frame constructed using the high priority information of the first complete frame in the absence of at least some of the low priority information of the first complete frame; and encoding a second complete frame (e.g. Frame 3) by forming a second portion of the bit-stream comprising information for use in reconstruction of the second complete frame such that the second complete frame can be reconstructed on the basis of the first virtual frame and the information comprised by the second portion of the bit-stream rather than on the basis of the first complete frame and the information comprised by the second portion of the bit-stream (Fig. 8).

With respect to claims 2-15, 17, and 19-27, Applicant's admitted prior art also discloses the steps of prioritizing the information of the second complete frame into high and low priority information; defining a second virtual frame (e.g. Frame 4 of 3<sup>rd</sup> Layer in Fig. 8) on the basis of a version of the second complete frame constructed using the high priority information of the second complete frame in the absence of at least some of the low priority information of the second complete frame; and encoding a third complete frame (e.g. Frame 5) by forming a third portion of the bit-stream comprising information for use in reconstruction of the third complete frame such that the third complete frame can be reconstructed on the basis of the second complete frame and the information comprised by the third portion of the bit-stream; choosing a temporal prediction path by predicting a subsequent complete frame (e.g. Frame 3) on the basis of a directly preceding virtual frame (e.g. Frame 2) rather than on the basis of a directly preceding complete frame (e.g. Frame 1); selecting a particular reference frame

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amongst a plurality of choices (e.g. 1<sup>st</sup> - 3<sup>rd</sup> Layers) to predict another frame; associating each complete frame with a plurality of different virtual frames, each representing a different way to classify the bit-stream for the complete frame (Fig. 8); encoding virtual frame using both its high and low priority information and predicting it on the basis of another virtual frame (e.g. Frame 1, 2<sup>nd</sup> Layer in Fig. 8); encoding virtual frames by using multiple algorithms (Fig. 8); signaling in the bit-stream the selection of a particular algorithm; replacing low priority information by default values in order to be able to carry out decoding of a virtual frame (e.g. Fig. 7); prioritizing the information for the reconstruction of the first complete frame into high and low priority information according to its significance in producing a reconstructed version of the first complete frame (i.e. Base and Enhancement Layers); and sending a signal to a corresponding decoder to indicate which one of multiple pictures is sufficient to produce an acceptable picture to replace a full-quality picture in case of a transmission error or loss of information (e.g. Figs. 1 and 16).

***Claim Rejections - 35 USC § 103***

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein

were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

15. Claims 16 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art.

Although Applicant's admitted prior art discloses substantially the same encoder and decoder according to the present invention, it is noted Applicant's admitted prior art differs from the present invention in that it fails to particularly disclose any multi-frame buffers as specified in claims 16 and 18. However, Examiner takes Official Notice that such feature is notoriously well known in the art. Therefore, it is considered obvious to one of ordinary skill in the art to exploit such common storage feature in order to increase the capacity of the data being buffered.

### ***Conclusion***


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Y. Lee whose telephone number is (703) 308-7584. The examiner can normally be reached on (703) 308-7584.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Kelley can be reached on (703) 305-4856. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Y. Lee  
Primary Examiner  
Art Unit 2613

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